

FOUNDATION COURSE

CLASS X

PAPER : 7

Max. Marks. : 100

Time : 2 hrs.

P_G C_S M_A B_D

TOPICS COVERED:

PHYSICS : Magnetic Effect of Current.

CHEMISTRY : Acid, Base and Salt, Chemical Reaction and Equation

MATHS : Trigonometric Ratio

BIOLOGY : Endocrine glands and plant hormones

GENERAL INSTRUCTIONS :

1. Paper consist of **4 Section** each for **Physics, Chemistry, Maths** and **Biology**. Answers for each question should be given in the space provided in the question paper itself.
2. Each section contains 13 questions, all questions are compulsory.
3. Question 1 - 5 are **objective type questions** of 1 Mark each.
4. Question 6 - 7 consist of 1 Marks each.
5. Question 8 - 9 consist of 2 Marks each.
6. Question 10 - 12 consist of 3 Marks.
7. Question 13 consist of 5 Marks.

	Physics	Chemistry	Maths	Biology
Marks				
Total				

Name of the Student : _____

Centre : _____

Invigilator's Signature: _____

PHYSICS

1. Which of the following statement is correct statement ?
(a) Strength of magnetic field is minimum near the poles
(b) Inside the bar magnet the magnetic field is from north to south pole
(c) Outside the bar magnet the magnetic field is from south to north pole
(d) None of these [1]
2. When does force experienced by the current carrying conductor placed in magnetic field is maximum
(a) if the length of wire is placed perpendicular to magnetic field
(b) if the wire is placed in the direction of magnetic field
(c) Angle between the wire and magnetic field is 30°
(d) Angle between the wire and magnetic field is 60° [1]
3. Which device is used to measure the emf of cell ?
(a) Ammeter (b) Meter bridge (c) potentiometer (d) Galvanometer [1]
4. Charge is moving in the direction of magnetic field, what is the direction of force on the charge
(a) In the direction of magnetic field (b) Perpendicular to the direction of magnetic field
(c) Opposite the direction of magnetic field (d) No force on the charge [1]
5. Which of the following device is used to measure potential difference
(a) Ammeter (b) Voltmeter (c) Galvonometer (d) Potentiometer [1]
6. What are electro magnets ? [1]
7. What is electro magnetic induction ? [1]
8. State the principle of electric generator ? [2]

9. Explain the experiment to draw the magnetic field of bar magnet ? [2]
10. What is overloading ? What is the role of fuse wire ? [3]
11. Two circular coils A and B are placed closed to each other. If the current through coil A changes with time. Will the current be induced in the coil B. Give reasons ? [3]
12. Name two safety measures commonly used in electric circuits and in electric appliances ? [3]

13. (a) How does solenoid behave like a magnet ? Can you determine the north and south pole of a current carrying solenoid with the help of a bar magnet. Explain ? [5]
- (b) List two methods of producing magnetic field ?
- (c) Name some devices in which electric motor is used ?

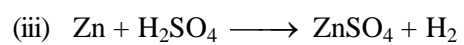
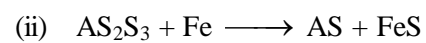
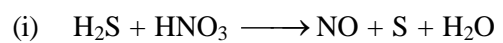
CHEMISTRY

1. During chemical reaction
(a) breaking of old bond of reactant takes place (b) formation of new bond in product is obtained
(c) both of the above are true (d) none of the above [1]
2. Valency of C and N respectively, are
(a) 4, 3 (b) 3, 4 (c) 5, 3 (d) 5, 4 [1]
3. pH of soft drink would be
(a) Less than 7 (b) More than 7 (c) 7 (d) Can't say [1]
4. $C + O_2 \rightarrow CO_2$, above reaction is the example of
(a) Combination reaction (b) Redox reaction
(c) Combustion reaction (d) All the above [1]
5. During neutralisation reaction
(a) heat is released (b) heat is absorbed
(c) first absorbed than released (d) none of these [1]
6. Define double decomposition reaction. [1]
7. Complete the reaction and balance it $C_6H_6 + O_2 \rightarrow$ [1]
8. Write chemical formula of (i) Sodium zincate (ii) Potassium carbonate. [2]

9. What is chlor-alkali process ? Write the reaction.

[2]

10. Balance the following chemical reaction :



[3]

11. $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow$ complete and balance the reaction.

[3]

12. Write short note on acids and bases

[3]

13. Write five different type of chemical reactions with their examples.

[5]

1. If $\frac{\sin \theta + \cos \theta}{\sin \theta - \cos \theta} = \frac{5}{3}$ then the value $\frac{7 \tan \theta + 2}{2 \tan \theta + 7}$ [1]
 (a) 3 (b) 2 (c) 1 (d) 0

2. The value of $\frac{\cot^2 29^\circ \cos^4 61^\circ}{\sin^2 61^\circ} + \sin^2 61^\circ$ is equal to [1]
 (a) 1 (b) $\sin^2 61^\circ + \cos^4 61^\circ$ (c) 2 (d) none of these

3. $\cos 2A = \frac{1 - \tan^2 A}{1 + \tan^2 A}$ is true for [1]
 (a) 30° (b) 45° (c) 60° (d) all of these

4. If $\tan \theta = \frac{1}{\sqrt{2}}$, then the value of $\frac{\operatorname{cosec}^2 \theta - \sec^2 \theta}{\operatorname{cosec}^2 \theta + \sec^2 \theta}$ [1]
 (a) $\frac{1}{2}$ (b) $\frac{3}{2}$ (c) $\frac{3}{4}$ (d) none of these

5. The expression $\sin^2 A + \frac{1}{1 + \tan^2 A}$ simplifies to [1]
 (a) -1 (b) 1 (c) 0 (d) $2 \sin^2 A$

6. If $\sin \theta = \cos \theta$, find the value of $2 \tan^2 \theta + \sin^2 \theta - 1$. [1]

7. Find the value of $\cos 1^\circ \cos 2^\circ \cos 3^\circ \dots \cos 99^\circ \cos 100^\circ$ [1]

8. Without using trigonometric tables, evaluate:

$$\sec^2 10^\circ - \cot^2 80^\circ + \frac{\sin 15^\circ \cos 75^\circ + \cos 15^\circ \sin 75^\circ}{\cos \theta \sin(90^\circ - \theta) + \sin \theta \cos(90^\circ - \theta)} \quad [2]$$

9. $\sqrt{\frac{1 - \cos \theta}{1 + \cos \theta}} = \operatorname{cosec} \theta - \cot \theta$ [2]

10. Prove that $\frac{1 + \cos \theta + \sin \theta}{1 + \cos \theta - \sin \theta} = \frac{1 + \sin \theta}{\cos \theta}$ [3]

11. A vertical flagstaff stands on a horizontal plane from a point distant 60 metres from its foot, the angle of elevation of its top is found to be 30° ; find the height of the flagstaff. [3]

12. $\frac{1}{\operatorname{cosec} A - \cot A} - \frac{1}{\sin A} = \frac{1}{\sin A} - \frac{1}{\operatorname{cosec} A + \cot A}$ [3]

13. From the top of a cliff, 60 metres high, the angles of depression of the top and bottom of a tower are observed to be 30° and 60° , find the height the tower. [5]

BIOLOGY

1. Hormones thyroxine, adrenaline and pigment melanin are formed from
(a) Tryptophan (b) Glycine (c) Tyrosine (d) Proline [1]
2. Deficiency of growth hormone causes
(a) Dwarfism (b) Gigantism (c) Goitre (d) Acromegaly [1]
3. Blood calcium level can be increased by the administration of
(a) Glucagon (b) Parathrohormone (c) Thyroxine (d) Calcitonin [1]
4. Which amongst the following is a heterocrine gland ?
(a) Hypothalamus (b) Pancreas (c) Thyroid (d) Pituitary [1]
5. Which of the following secretes emergency or fight or flight hormones ?
(a) Pancreas (b) Adrenal medulla (c) Adrenal cortex (d) Kidneys [1]
6. Why vasopression is called antidiuretic hormone ? [1]

7. Name a heterocrine gland. [1]

8. Differentiate between exocrine and endocrine glands with example (4 points) [2]

9. Give two examples of steroid hormones. [2]

- 10.** Write the functions of **[3]**
(a) Ethylene (b) Cytokinin (c) Thymosin
- 11.** Name three hormones secreted by thyroid gland and give the functions of each. **[3]**
- 12.** Differentiate between diabetes mellitus and diabetes insipidus (any 3 points) **[3]**

13. Name the hormone

- (a) Responsible for senescence of leaves
- (b) Ripening of fruits
- (c) Increases blood sugar level
- (d) Which causes contraction of smooth muscles of arterioles
- (e) Which causes uterine contractions at the time of birth